



Express Mail No. EV522673135US

Docket No.: 291958162US  
Client Ref No. P98-0001

(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Ritzdorf et al.

Application No.: 09/018,783

Confirmation No.: 1242

Filed: February 4, 1998

Art Unit: 2811

For: METHOD FOR FILLING RECESSED  
MICRO-STRUCTURES WITH  
METALLIZATION IN THE PRODUCTION  
OF A MICROELECTRONIC DEVICE

Examiner: O. Nadav

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT (IDS)**

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

05/17/2006 DABRINA1 03052692 05310703  
01 FC:1025 100.00 07

Sir:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is filed more than three months after the U.S. filing date, OR more than three months after the date of entry of the national stage of a PCT application, AND after the mailing date of the first Office Action on the merits,

Express Mail No. EV522673135US

whichever occurs first, but before the mailing date of a Final Office Action or Notice of Allowance (37 CFR 1.97(c)).

Applicant has not submitted copies of each cited U.S. patent and U.S. patent application as required by 37 CFR 1.98(a)(2)(i), amended October 2004, as the U.S. Patent and Trademark Office has waived this requirement for all U.S. patent applications. Applicant submits herewith copies of foreign and non-patents in accordance with 37 CFR 1.98(a)(2).

Our check in the amount of \$180.00 covering the fee set forth in 37 CFR 1.17(p) is enclosed. The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50-0665, under Order No. 291958162US.

Dated: 17 May 2008

Respectfully submitted,

By PJPK  
Paul T. Parker  
Registration No.: 38,264  
PERKINS COIE LLP  
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Seattle, Washington 98111-1247  
(206) 359-8000  
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Attorney for Applicant



Express Mail No. EV522673135US

PTO/SB/08a/b (07-05)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>Substitute for form 1449A/B/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	09/018,783-Conf. #1242
				Filing Date	February 4, 1998
				First Named Inventor	Thomas L. Ritzdorf
				Art Unit	2811
				Examiner Name	O. Nadav
Sheet	1	of	1	Attorney Docket Number	291958162US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
		US-6,391,166	05-21-2002	Wang	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>3</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
		JP-03-103840	11-04-1992	Uemura		✓
		JP-59-150094	08-28-1984	Teichiku KK		✓

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. \* CITE NO.: Those application(s) which are marked with an single asterisk (\*) next to the Cite No. are not supplied (under 37 CFR 1.98(a)(2)(iii)) because that application was filed after June 30, 2003 or is available in the IFW. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature		Date Considered	
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Express Mail No. EV522673135US

Docket No.: 291958162US  
Client Ref No. P98-0001  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Ritzdorf et al.

Application No.: 09/018,783

Confirmation No.: 1242

Filed: February 4, 1998

Art Unit: 2811

For: METHOD FOR FILLING RECESSED MICRO-  
STRUCTURES WITH METALLIZATION IN THE  
PRODUCTION OF A MICROELECTRONIC  
DEVICE

Examiner: O. Nadav

**REQUEST FOR PROCESSING OF PREVIOUSLY FILED  
INFORMATION DISCLOSURE STATEMENTS**

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

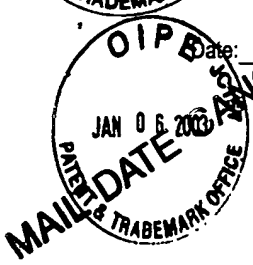
Sir:

Applicants' previously filed Information Disclosure Statements on August 12, 2002 and December 31, 2002. To date applicants' have not received a copy of the Examiners initialed copies. Applicants' respectfully request that the Examiner initial the references listed on the enclosed form PTO/SB08, and request that these submissions be made part of the official record.

Dated: 17 May 2006

Respectfully submitted,

By P. T. Parker  
Paul T. Parker  
Registration No.: 38,264  
PERKINS COIE LLP  
P.O. Box 1247  
Seattle, Washington 98111-1247  
(206) 359-8000  
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Attorney for Applicant



Attorney Docket No. 29195-8162US  
Semitool Ref No. P98-0001

Whereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on:

Date: Dec 31, 2002  
By: Melody J. Almberg  
Melody J. Almberg

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Thomas L. Ritzdorf *et al.*

APPLICATION No.: 09/018,783

FILED: February 4, 1998

FOR: **METHOD FOR FILLING RECESSED  
MICRO-STRUCTURES WITH  
METALLIZATION IN THE PRODUCTION  
OF A MICROELECTRONIC DEVICE**

EXAMINER: Thomas J. Magee

ART UNIT: 2811

CONF. No: 1242

**Supplemental Information Disclosure Statement After First Office Action  
but Before Final Action or Notice of Allowance – 37 CFR 1.97(c)**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

1. Timing of Submission

The information transmitted herewith is being filed *after* three months of the filing date of this application or after the mailing date of the first Office action on the merits, whichever occurred last, but *before* the mailing date of either a final action under 37 CFR 1.113 or a Notice of Allowance under 37 CFR 1.311, whichever occurs first. The references listed on the enclosed Form 1449 may be material to the examination of this application; the Examiner is requested to make them of record in the application.

2. Cited Information

☒ Copies of the following references are enclosed:

- ☒ All cited references
- ☐ References marked by asterisks
- ☐ The following:

01/07/2003 NW0000047 09018783

01 FC:1806

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TECHNOLOGY CENTER 2800

- ☐ Copies of the following references can be found in parent U.S. Application No. \_\_\_\_\_ :
- ☐ All cited references
  - ☐ References marked by asterisks
  - ☐ The following:
- ☐ The following references are not in English. For each such reference, the undersigned has enclosed: (i) a translation of the reference; (ii) a copy of a communication from a foreign patent office or International Searching Authority citing the reference; (iii) a copy of a reference which appears to be an English-language counterpart; or (iv) an English-language abstract for the reference prepared by a third party. Applicant has not verified that the translation, English-language counterpart or third-party abstract is an accurate representation of the teachings of the non-English reference, though, and reserves the right to demonstrate otherwise.
- ☐ All cited references
  - ☐ References marked by ampersands
  - ☐ The following:

3. Effect of Information Disclosure Statement (37 CFR 1.97(h))

This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and specifically reserves the right to demonstrate that any such reference is not prior art.

4. Fee Payment (37 CFR 1.97(c)) or Certification (37 CFR 1.97(e))

- ☒ Applicant elects to pay the fee under 37 CFR 1.17(p) \$180.00.
- ☒ Check enclosed for \$180.00.
  - ☒ Please charge any underpayment for timely filing of this paper to Deposit Account No. 50-0665.


5. Patent Term Adjustment (37 CFR 1.704(d))

- ☐ The undersigned states that each item of information submitted herewith was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any

individual designated in 37 C.F.R. §1.56(c) more than thirty days prior to the filing of this statement. 37 C.F.R. §1.704(d).

Respectfully submitted,  
Perkins Coie LLP

Date: 31 Dec 02

  
\_\_\_\_\_  
Edward S. Hotchkiss  
Registration No. 33,904

**Correspondence Address:**

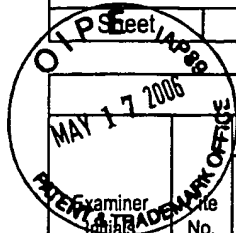
Customer No. 25096  
Perkins Coie LLP  
P.O. Box 1247  
Seattle, Washington 98111-1247  
(206) 583-8888



**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
Form PTO-1449 (Modified)  
(Use several sheets if necessary)

**COMPLETE IF KNOWN**

Application Number	09/018,783
Confirmation Number	1242
Filing Date	February 4, 1998
First Named Inventor	Thomas L. Ritzdorf
Group Art Unit	2811
Examiner Name	Thomas J. Magee
Attorney Docket No.	29195-8162US



**U.S. PATENT DOCUMENTS**

Examiner Initial	Cite No.	U.S. Patent or Application		Name of Patentee or Inventor of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Figures Appear
		NUMBER	Kind Code (if known)			
		3,658,663		Fukanuma et al.	04/25/72	
		3,716,462		Jensen	02/13/73	
		3,878,066		Dettke et al.	04/15/75	
		4,100,054		DuRocher	07/11/78	
		4,385,978		Prusak	05/31/83	
		4,576,689		Makkaev et al.	03/18/86	
		4,959,278		Shimauchi et al.	09/25/90	
		5,115,430		Hahne et al.	05/19/92	
		5,151,168		Gilton et al.	09/29/92	
		5,209,817		Ahmad et al.	05/11/93	
		5,372,848		Blackwell et al.	12/13/94	
		5,472,502		Batchelder	12/05/95	
		5,516,416		Canaperi et al.	05/14/96	
		5,549,808		Farooq et al.	08/27/96	
		5,639,316		Cabral, Jr. et al.	06/17/97	
		5,882,498		Dubin et al.	03/16/99	
		5,932,077		Reynolds	08/03/99	
		6,184,121		Buchwalter et al.	02/06/01	
		6,184,137		Ding et al.	02/06/01	

**FOREIGN PATENT DOCUMENTS**

Examiner Initial	Cite No.	Foreign Patent or Application			Name of Patentee or Applicant of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Figures Appear	T
		Office	NUMBER	Kind Code (if known)				

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application(s).



hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, D.C., 20231, on:

Date:

By:

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

THOMAS L. RITZDORF ET AL.

APPLICATION No.: 09/018,783

FILED: FEBRUARY 4, 1998

FOR: METHOD FOR FILLING RECESSED  
MICRO-STRUCTURES WITH  
METALLIZATION IN THE  
PRODUCTION OF A  
MICROELECTRONIC DEVICE

EXAMINER: DEVAN M. COLLINS

ART UNIT: 2823

CONFIRMATION No.: 1242

**Information Disclosure Statement After First Office Action but  
Before Final Action or Notice of Allowance – 37 CFR 1.97(c)**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

1. Timing of Submission

The information transmitted herewith is being filed *after* three months of the filing date of this application or after the mailing date of the first Office action on the merits, whichever occurred last, but *before* the mailing date of either a final action under 37 CFR 1.113 or a Notice of Allowance under 37 CFR 1.311, whichever occurs first. The references listed on the enclosed Form PTO/SB/08A may be material to the examination of this application; the Examiner is requested to make them of record in the application.

2. Cited Information

☒ Copies of the following references are enclosed:

- ☒ All cited references
- ☐ References marked by asterisks
- ☐ The following:

08/21/2002 RHEBRAHT 00000088 09018783

01 FC:126

180.00 OP

☐ Copies of the following references can be found in parent application Ser. No.

- ☐ All cited references
- ☐ References marked by asterisks
- ☐ The following:

☐ The following references are not in English. For each such reference, the undersigned has enclosed: (i) a translation of the reference; (ii) a copy of a communication from a foreign patent office or International Searching Authority citing the reference; (iii) a copy of a reference which appears to be an English-language counterpart; or (iv) an English-language abstract for the reference prepared by a third party. Applicant has not verified that the translation, English-language counterpart or third-party abstract is an accurate representation of the teachings of the non-English reference, though, and reserves the right to demonstrate otherwise.

- ☐ All cited references
- ☐ References marked by ampersands
- ☐ The following:

3. Effect of Information Disclosure Statement (37 CFR 1.97(h))

This Information Disclosure Statement is not to be construed as a representation that: (i) a search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the cited information is, or is considered to be, material to patentability. In addition, applicant does not admit that any enclosed item of information constitutes prior art to the subject invention and specifically reserves the right to demonstrate that any such reference is not prior art.

4. Fee Payment (37 CFR 1.97(c)) or Certification (37 CFR 1.97(e))

☒ Applicant elects to pay the fee under 37 CFR 1.17(p) \$180.00.

- ☒ Check enclosed for \$180.00
- ☐ Please charge the above fee(s) to Deposit Account No. 50-0665 this paper is provided in triplicate.

☐ Applicant submits that no fee is due in light of the following certification under 37 CFR 1.97(e) (check only one):

- ☐ In accordance with 37 CFR 1.97(e)(1), the undersigned hereby states that each item of information submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to this filing of this statement; or
- ☐ In accordance with 37 CFR 1.97(e)(2), the undersigned hereby states that no item of information submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, or, to the knowledge of the person signing the certification

after making reasonable inquiry, was known to any individual designated in 37 CFR 1.56(c), more than three months prior to the filing of this statement.

- ☒ Please charge any underpayment for timely filing of this paper to Deposit Account No. 50-0665.

5. Patent Term Adjustment (37 CFR 1.704(d))

- ☐ The undersigned states that each item of information submitted herewith was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in 37 C.F.R. §1.56(c) more than thirty days prior to the filing of this statement. 37 C.F.R. §1.704(d).

Date: 8/12/2002

Respectfully submitted,  
Perkins Coie LLP



Paul T. Parker  
Registration No. 38,264

Correspondence Address:

Customer No. 25096  
Phone: (206) 583-8888

MAILED  
DATE 17 2006  
OIPF  
PATENT & TRADEMARK OFFICE

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT  
Form PTO-1449 (Modified)  
(Use several sheets if necessary)

COMPLETELY KNOWN

Application Number	09/018,783
Confirmation Number	1242
Filing Date	February 4, 1998
First Named Inventor	Thomas L. Ritzdorf
Group Art Unit	2823
Examiner Name	Deven M. Collins
Attorney Docket No.	291958162US

Sheet 1 of 1

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent or Application		Name of Patentee or Inventor of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Figures Appear
		NUMBER	Kind Code (if known)			
		6,254,758		Koyama	07/03/01	

FOREIGN PATENT DOCUMENTS

Examiner Initial	Cite No.	Foreign Patent or Application			Name of Patentee or Applicant of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Figures Appear	T
		Office	NUMBER	Kind Code (if known)				

OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published.	T
		AHN, E. C. <i>et al.</i> "Adhesion Reliability of Cu-Cr Alloy Films to Polyimide" <i>Materials Research Society Symposium Proceedings</i> , 1996, Vol. 427, pp. 141-145, Materials Research Society.	
		ALERS, G. B. <i>et al.</i> "Trade-off between reliability and post-CMP defects during recrystallization anneal for copper damascene interconnects" <i>IEEE International Reliability Physics Symposium</i> , 2001, pp. 350-354.	
		GLADKIKH, A. <i>et al.</i> "Activation Energy of Electromigration in Copper Thin Film Conductor Lines" <i>Materials Research Society Symposium Proceedings</i> , 1996, Vol. 427, pp. 121-126, Materials Research Society.	
		KONONENKO, O. V. <i>et al.</i> "Electromigration in Submicron Wide Copper Lines" <i>Materials Research Society Symposium Proceedings</i> , 1996, Vol. 427, pp. 127-132, Materials Research Society.	
		MEI, Y. <i>et al.</i> "Thermal Stability and Interaction Between SIOF and Cu Film" <i>Materials Research Society Symposium Proceedings</i> , 1996, Vol. 427, pp. 433-439, Materials Research Society.	
		RUSSELL, S. W. <i>et al.</i> "The Effect of Copper on the Titanium-Silicon Dioxide Reaction and the Implications for Self-Encapsulating, Self-Adhering Metallization Lines", <i>Materials Research Society Symposium Proceedings</i> , 1992, Vol. 260, pp. 763-768, Materials Research Society, Pittsburgh, PA.	

EXAMINER	DATE CONSIDERED
*EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application(s).	